

# Compact DC UPS

FR-1200-09-ST - 12 V<sub>DC</sub>/09 A

FR-2400-06-ST - 24 V<sub>DC</sub>/06 A



## Introduction

The Compact DC UPS FR 12V/9A and FR 24V/6A receive AC power from the utility grid and provide stabilized DC power at their output. In the absence of AC power, the battery bank supplies power to the loads. The battery bank operates continuously and in a floating mode, supplying DC power without interruptions.

The combination of economical design, high performance, and reliability makes the Compact DC UPS the best cost-effective option in the market. Additionally, it features the floating voltage adjustment function, which is an excellent feature to ensure efficient charging and extend battery lifespan, preventing overcharging or undercharging.

The Rectifier ensures uninterrupted power supply even under adverse conditions. Through its PFC controller circuit, it operates with high energy conversion efficiency, guaranteeing stable and high-quality power at its output. The product is equipped with protective circuits at its input and outputs, making it suitable for application in harsh environments with high operational criticality or where the utility's power supply quality is unstable.

## Features and Highlights

- Floating Output Voltage;
- Includes a front potentiometer for floating voltage adjustment.;
- Indicator LEDs for charge stages.;
- Indicator LEDs for operation modes and failures;
- Compatible with Lithium batteries;
- Suitable for hybrid connection with solar energy;
- Intelligent charging system that operates through 02 battery recharge stages;
- Smart Fan technology;
- Best cost-effective option in the market;
- Compact and easy to install.

## Applications

- Critical Power Loads;
- Telecommunication Networks;
- Alarm Systems.

Input Characteristics	FR-1200-09-ST	FR-2400-06-ST
Nominal Input Voltage	100 – 240 V <sub>AC</sub>	100 – 240 V <sub>AC</sub>
Input Voltage Range	100 – 270 V <sub>AC</sub>	100 – 270 V <sub>AC</sub>
Frequency	50/60 Hz	50/60 Hz
Input Current	1,46 A <sub>RMS</sub> / 0,60 A <sub>RMS</sub> (100/240 V <sub>AC</sub> )	1,94 A <sub>RMS</sub> / 0,80 A <sub>RMS</sub> (100/240 V <sub>AC</sub> )
Protections	Input Fuse (Line): 5 A fuse for short-circuit and overload protection	
	Varistor: 300 V <sub>AC</sub> 170 J for lightning and electrical surge protection	
	Undervoltage: Disconnects the AC-DC converter if voltage <85 V <sub>AC</sub>	
Output Characteristics	FR-1200-09-ST	FR-2400-06-ST
Nominal Output Voltage	13,8 V <sub>DC</sub>	27,5 V <sub>DC</sub>
Output Voltage Range	11,4 - 14,9 V <sub>DC</sub>	24,4 - 28,9 V <sub>DC</sub>
Maximum Output Current	09 A	06 A
Maximum Output Power	124,2 W	165 W
Battery Charging Current	1,5 A	1,5 A
Output Protections	Battery Fuse: 10 A fuse for short-circuit and overload protection	
	Short Circuit: Short circuit current <4 A with automatic reset	
	Overtemperature: Disconnects the AC-DC converter if temperature >90 °C	
	Overcurrent: Limits the output current to the nominal value of 9 A for FR-1200-09-ST and 6 A for FR-2400-06-ST	
	Battery Undervoltage: Disconnects the battery bank if voltage is less than 10,5 V <sub>DC</sub> for FR-1200-09-ST and 20,5 V <sub>DC</sub> for FR-2400-06-ST	
General Specifications	FR-1200-09-ST	FR-2400-06-ST
Efficiency	>85 % (full load)	
Line+Neutral Isolation for Output	3000 V <sub>AC</sub>	
Line+Neutral Isolation for Ground	2500 V <sub>AC</sub>	
Output Isolation for Ground	1000 V <sub>AC</sub>	
Operating Temperature	-10 °C to 60 °C	
Operating Humidity	20 a 90 % (non-condensing)	
Alarm (Yellow LED)	Battery Mode and Overload	
Alarm (Green LED)	AC Mode, Battery Floating, and Battery Constant Current	
Installation Mode	Control Panel, 19" standard on shelf and/or DIN rail	
Dimensions (H x W x D) / Weight	45 x 255 x 83 mm / 0,81 kg	

Standards Complied <small>Electromagnetic Immunity</small>				
Procedure	Standard	Type	Value	Criteria
Electrostatic Discharge (ESD)	IEC 61000-4-2	Contact Discharge	8 kV	Criterion C
		Air Discharge	15 kV	
Fast Transients (Burst)	IEC 61000-4-4	Power Input	4 kV	Criterion A
		Power Output	1 kV	
Input Voltage Surge (Surge)	IEC 61000-4-5	Line -> Neutral	4 kV	Criterion A
		Line -> Ground; Neutral -> Ground	4 kV	
Output Voltage Surge (Surge)	IEC 61000-4-5	+ - -	1 kV	Criterion A
		+ - > Ground; - - > Ground	1 kV	
Voltage Sag (Dips)	IEC 61000-4-11	0% - 100 V <sub>AC</sub>	0 V <sub>AC</sub> , 20 ms	Criterion A
		40% - 100 V <sub>AC</sub>	40 V <sub>AC</sub> , 200 ms	
		70% - 100 V <sub>AC</sub>	70 V <sub>AC</sub> , 500 ms	
		0% - 220 V <sub>AC</sub>	0 V <sub>AC</sub> , 20 ms	
		40% - 220 V <sub>AC</sub>	88 V <sub>AC</sub> , 200 ms	
Voltage Interruption	IEC 6100-4-11	70% - 220 V <sub>AC</sub>	154 V <sub>AC</sub> , 500 ms	Criterion C
		0% - 220 V <sub>AC</sub>	5000 ms	